85025AEK
Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Lelia Cosimbescu, et al

GREEN ORGANIC LIGHT-EMITTING DIODES

Serial No. 10/662,272

Filed 15 September 2003

Group Art Unit: 1774

Examiner: Dawn L. Garrett

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Deidra L. Mack
Deidra L. Mack

November 14, 2005
Date

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir::

SECOND DECLARATION UNDER RULE 131

The undersigned, Lelia Cosimbescu, declares that:

She is a co-inventor in the present application.

She is now and has been, since the date of the present invention, an employee of the Eastman Kodak Company.

In accordance with Kodak's established procedure for preparing test samples, she submitted to Kodak research a request to prepare and test samples bearing the run number LC020812-2(A-D) prior to December 19, 2002 (date has been redacted at **Item 1** of the attached Exhibit A). The data derived therefrom was presented in Table 3, page 35 of the specification.

The date of the submission of Exhibit A is accurate and the typed information was present on the date of submission and contains comparison A, and inventive samples B-D; hand-written notes were entered after receiving the test results.

The following shorthand indications are decoded as follows:

C545T or Dopant 1: a coumarin = Inv-8a

t-BuDPN or Dopant 2: di t-butylphenyl napthtacene = Inv-1b

Alq or "Emitter host": tris(8-quinolinolato)aluminum(III)

Thus Exhibit A shows the submission of samples containing a light emitting layer containing a host (Alq), an emitting first dopant (C545T); and a stabilizing second dopant (tBuDPN).

Exhibit B includes the luminance test results for the samples of Exhibit A, LC020812-2(A-D), and is dated prior to December 19, 2002 (date has been redacted at **Item 2**).

Exhibit C includes graphic stability test results (Operational Fade) represented by the luminance loss on the left axis and voltage increase on the right axis. The graph is based on numerical results as exemplified by Exhibit D for sample LC020812-2B1, dated prior to December 19, 2002 (date has been redacted at **Item 3.**)

The foregoing Exhibits demonstrate that an electroluminescent device containing a host (Alq), a green light-emitting coumarin first dopant (8a) and a stabilizing naphthacene second dopant (1b), was reduced to practice by the present inventors prior to December 19, 2002.

The undersigned declares further that all statements made herein of the undersigned's own knowledge are true and all statements made on information and belief are believed to be true. These statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Lelia Cosimbescu

Lelia Cosimbescu

Date: Nov. 14th, 2005

Exhibit A

OLED run#:	LC020812-2
Completed date:	
Operator NB ref:	
Run request date:	Item 1
Originator:	Cosimbescu/Hatwar
Originator NB ref:	C545T/BB9615-196a
Expermt Objective	green mixed dopant
sublimation temp.	t-BuDPN-275 degC/

Call Kevin Donovan x20496 when complete
Please read all 40, 20mA
submit for RT fade

Cell label (A-F):	A	B	C	D	E	F
Substrate:	Polytronics glass	→	→	→	→	→
Anode: ITO	→	→	→	→	→	→
Pretreatment:	CFx	CFx	CFx	CFx	CFx	CFx
HTL material:	NPB P484 SzTF78.6					
Thickness (A)	750	750	750	750	750	750
Rate (A/s) / 1.50	4	4	4	4	4	4
Emitter host:	Alq P1549.1 SzTF77.1					93/75"
Thickness (A)	375	375	375	375	375	375
Rate (A/s)	3.76	3.76	3.71	3.76	3.75	3.76
Rate high/low						
EML dopant: RATIO 22:1	C545T	C545T	C545T	C545T	C545T	C545T
Dopant Volume %	0.5% 4.25	0.50%	0.50%	0.50%	0.00%	0.00%
Thickness (A)	1.875	1.875	1.875	1.875	0	0
Rate (A/s)	1.86	1.86	1.86	1.9	X	X
Rate high/low	.02 .44					
Dopant 2	196a	196a	196a	196a	196a	196a
Volume%	3.0%	3.0%	3.0%	3.0%	6.0%	6.0%
ETL	Alq P545 SzTF79					
Thickness (A)	375	375	375	375	375	375
Rate (A/s) / 3.76						
Cathode: Mg/Ag						XXXX
Mg thickness (A) 2000	2000	2000	2000	2000	2000	2000
Mg rate (A / 10	10	10	10	10	10	10
Ag thickness (A) 200	200	200	200	200	200	200
Ag rate (A/ / 1	1	1	1	1	1	1
Device data @ 20 mA	A	B	C	D	E	F
Voltage						
W/A						
Cd/A						
CIEx						
CIEy						
L (cd/m^2)						
peak wavelength						
Thickness (A)						
PEDOT thickness						
Turnon field						
% drop @ 100 h						
$T_{1/2}$ (Hour)						

179°C

0°C 292°C 313°C 321.2°C 306°C 321.2°C

Item 1.

Standard Cell 4-Quad

>>Enter Panel ID<<
18 Characters Max

LC020812-2A

Cell Size (cm^2): 100.0E-3

Test Date: Item 2
Test Start Time: 12:48 PM
Run Time (sec): 70

Quadrant "1"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1890	3.80	3.28
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.284	0.646	520.0	56.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	9.04		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.45	497		

Quadrant "2"

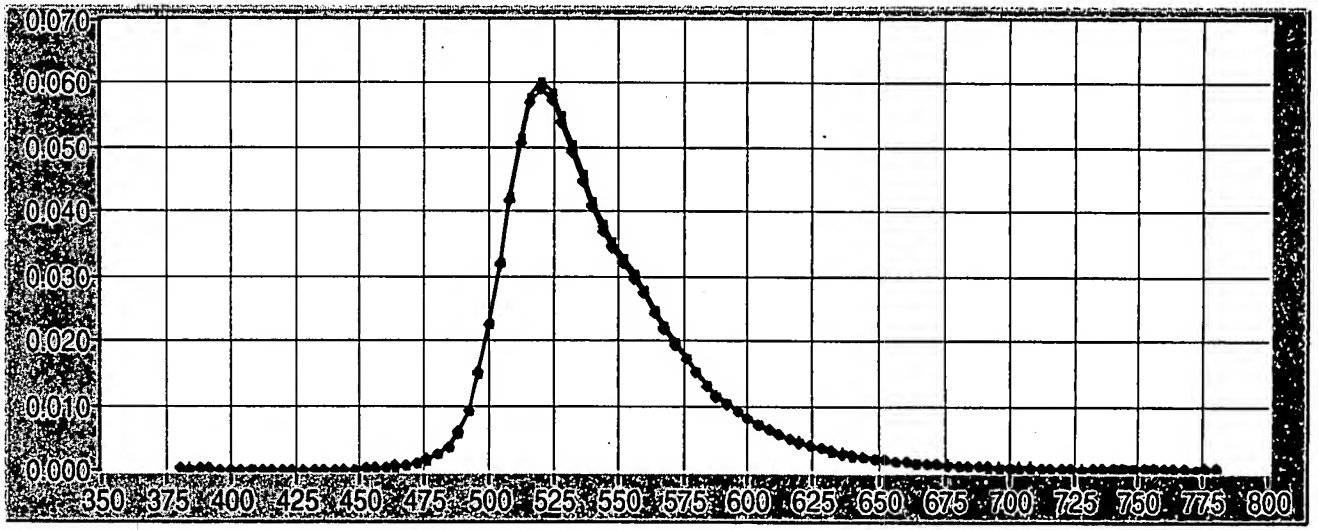
Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1888	3.79	3.05
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.284	0.646	520.0	56.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	9.74		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.44	498		

Quadrant "3"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1855	3.72	3.26
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.284	0.646	520.0	56.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.95		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.28	498		

Quadrant "4"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1843	3.71	3.35
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.284	0.645	520.0	56.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.64		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.22	497		



Data File Pathname
z:\data\rdio data\lum4nc\LC020812-2A LUM4NC 2102131.DAT

Write Data File? No Yes

Serial Port {0}: 0

K2400 GPIB Address: 24

Compliance Level: 25

Standard Cell 4-Quad

>>Enter Panel ID>>
18 Characters Max.

LC020812-2B

Cell Size (cm^2): 100.0E-3

Test Date: Item.2
Test Start Time: 12:50 PM
Run Time (sec): 52

Quadrant "1"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	2316	4.57	4.12
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.289	0.649	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.82		0.07
Yield {cd/A}	Efficacy {lm/W}		
11.58	507		

Quadrant "2"

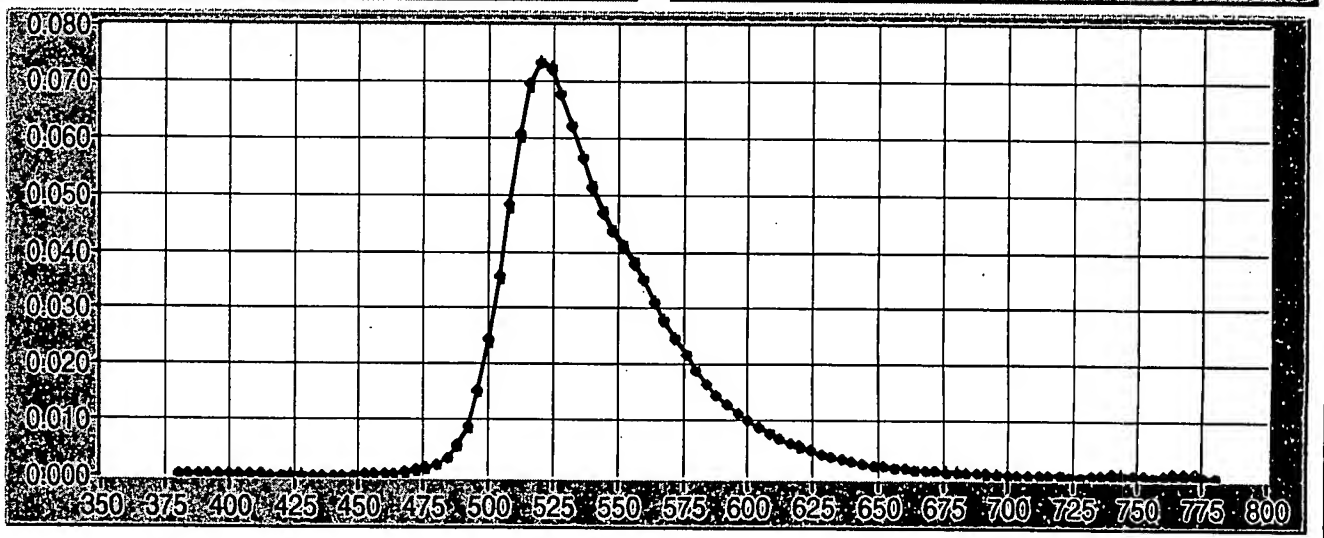
Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	2302	4.54	4.10
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.289	0.649	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.83		0.07
Yield {cd/A}	Efficacy {lm/W}		
11.51	507		

Quadrant "3"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	2306	4.55	4.19
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.288	0.649	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.66		0.07
Yield {cd/A}	Efficacy {lm/W}		
11.53	507		

Quadrant "4"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	2292	4.55	4.22
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.288	0.649	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.53		0.07
Yield {cd/A}	Efficacy {lm/W}		
11.46	504		



Data File Pathname
z:\data\rdio data\lum4nc\LC020812-2B LUM4NC 2102211.DAT

Write Data File? No 1 Yes
Serial Port {0}: 0
K2400 GPIB Address: 24
Compliance Level: 25

Standard Cell 4-Quad

>>Enter Panel ID<<
18 Characters Max
LC020812-2C

Cell Size (cm^2) 100.0E-3

Test Date Item 2
Test Start Time 12:51 PM
Run Time (sec) 87

Quadrant "1"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1926	3.82	3.42
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.292	0.646	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.85		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.63	504		

Quadrant "2"

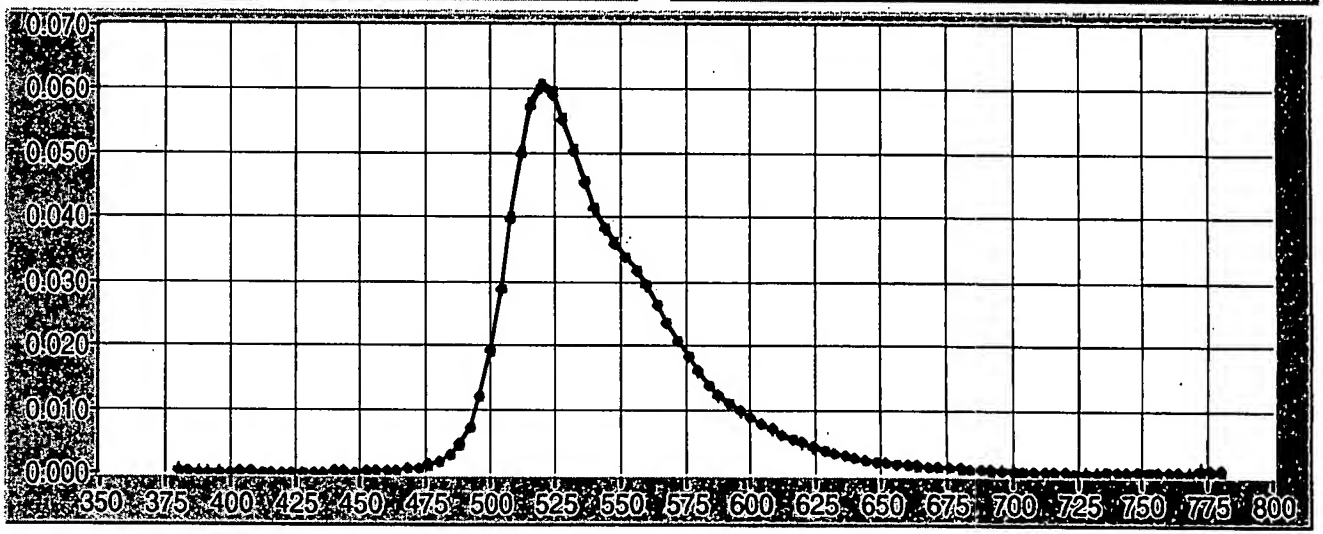
Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1909	3.78	3.38
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.292	0.646	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.87		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.55	505		

Quadrant "3"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1893	3.75	3.40
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.292	0.646	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.76		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.47	504		

Quadrant "4"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1898	3.77	3.43
x {CIE}	y {CIE}	Peak WL {nm}	Bandwidth {nm}
0.292	0.645	520.0	52.0
Current {mA}	Voltage {VDC}		Efficiency {W/A}
2.000	8.68		0.06
Yield {cd/A}	Efficacy {lm/W}		
9.49	504		



Data File Pathname
z:\data\rdio data\lum4nc\LC020812-2C LUM4NC 2102271.DAT

Write Data File? No Yes
Serial Port {0}: 0
K2400 GPIB Address: 24
Compliance Level: 25

Exhibit B
4/4

Standard Cell 4-Quad

>>Enter Panel ID>> (18 Characters Max): LC020812-2D

Cell Size (cm^2): 100.0E-3

Test Date: Dem 2
Test Start Time: 12:52 PM
Run Time (sec): 56

Quadrant "1"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1644	3.25	2.94
x {CIE}	**y {CIE}**	**Peak WL {nm}**	**Bandwidth {nm}**
0.298	0.643	520.0	56.0
Current {mA}	**Voltage {VDC}**		**Efficiency {W/A}**
2.000	8.77		0.05
Yield {cd/A}	**Efficacy {lm/W}**		
8.22	506		

Quadrant "2"

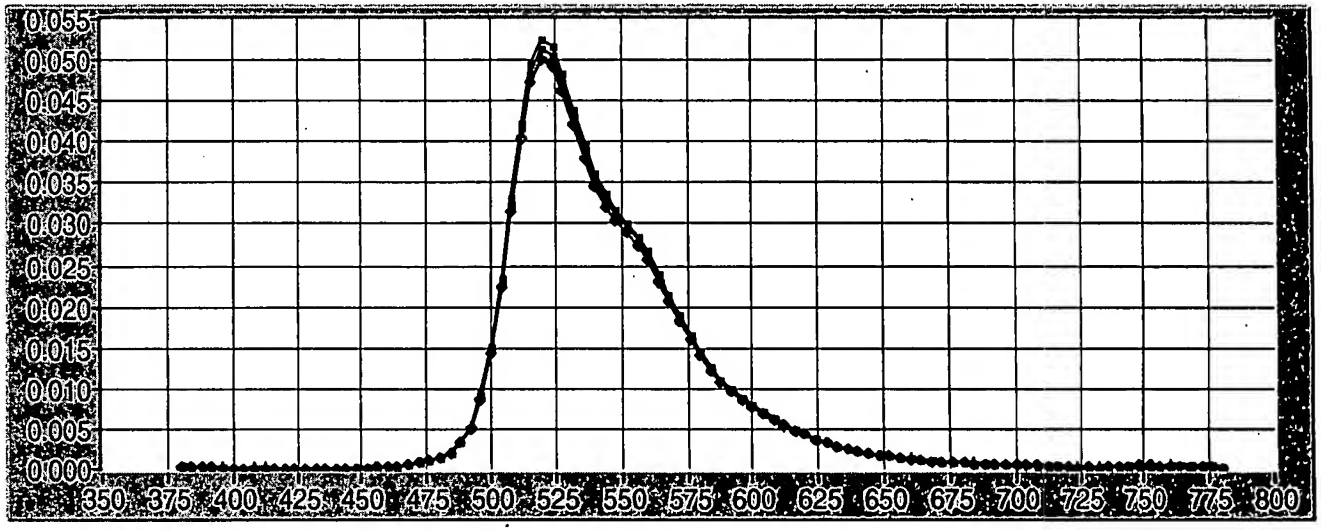
Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1676	3.30	2.98
x {CIE}	**y {CIE}**	**Peak WL {nm}**	**Bandwidth {nm}**
0.298	0.644	520.0	56.0
Current {mA}	**Voltage {VDC}**		**Efficiency {W/A}**
2.000	8.84		0.05
Yield {cd/A}	**Efficacy {lm/W}**		
8.38	508		

Quadrant "3"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1609	3.17	2.91
x {CIE}	**y {CIE}**	**Peak WL {nm}**	**Bandwidth {nm}**
0.298	0.643	520.0	56.0
Current {mA}	**Voltage {VDC}**		**Efficiency {W/A}**
2.000	8.68		0.05
Yield {cd/A}	**Efficacy {lm/W}**		
8.05	508		

Quadrant "4"

Curr Density {mA/cm^2}	Luminance {cd/m^2}	Radiance {W/Sr/m^2}	Efficiency {lm/W}
20.0	1601	3.16	2.92
x {CIE}	**y {CIE}**	**Peak WL {nm}**	**Bandwidth {nm}**
0.299	0.643	520.0	56.0
Current {mA}	**Voltage {VDC}**		**Efficiency {W/A}**
2.000	8.60		0.05
Yield {cd/A}	**Efficacy {lm/W}**		
8.01	507		



Data File Pathname: z:\data\rdio data\lum4nc\LC020812-2D LUM4NC 2102368.DAT

Write Data File? No / Yes

Serial Port {0}: 0

K2400 GPIB Address: 24

Compliance Level: 25

Operational Fade @ 20 mA/cm^2

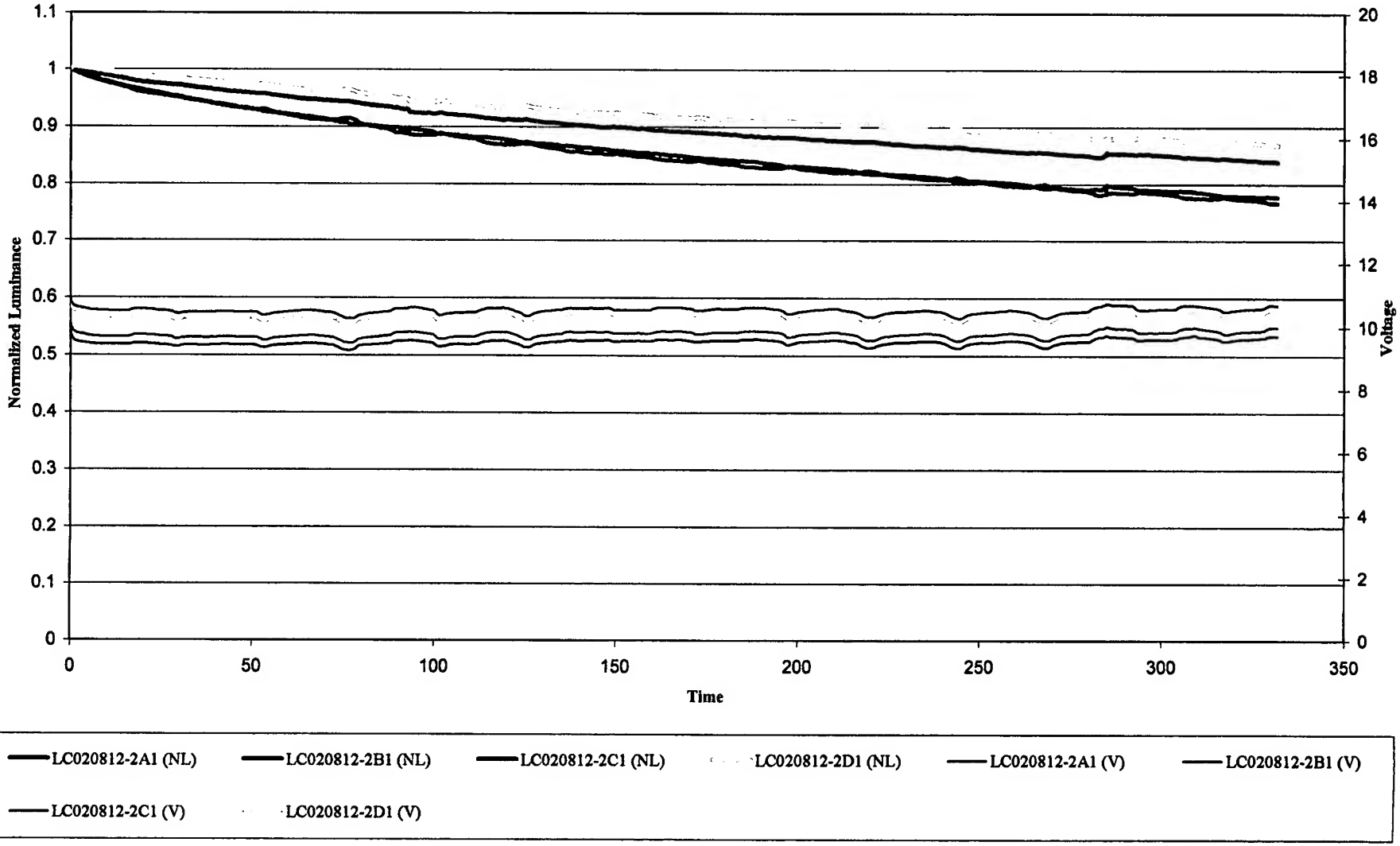


Exhibit C

Exhibit D

Cell ID: LC020812-2B1 Initial Lumin Reading: 2316
Start Date: 14:16
Comments: Item 3

d time	V OLED	V Sensor	Lum.	Abs. Lum.	Norm. Lum.
0	10.192	2.633	1	2316	0.99962
0.2	10.016	2.633	1	2316	0.99962
0.3	9.972	2.634	1	2316.88	1
0.4	9.927	2.632	1	2315.12	0.999241
0.6	9.894	2.631	1	2314.241	0.998861
0.8	9.865	2.631	1	2314.241	0.998861
0.9	9.848	2.63	1	2313.361	0.998481
1.1	9.832	2.629	1	2312.482	0.998102
1.3	9.814	2.628	1	2311.602	0.997722
1.4	9.807	2.626	1	2309.843	0.996963
1.6	9.797	2.625	1	2308.963	0.996583
1.8	9.786	2.624	1	2308.084	0.996203
1.9	9.782	2.623	1	2307.204	0.995824
2.1	9.776	2.622	1	2306.324	0.995444
2.3	9.766	2.619	0.99	2303.686	0.994305
2.4	9.765	2.619	0.99	2303.686	0.994305
2.6	9.761	2.618	0.99	2302.806	0.993926
2.8	9.753	2.617	0.99	2301.926	0.993546
2.9	9.752	2.615	0.99	2300.167	0.992787
3.1	9.75	2.614	0.99	2299.288	0.992407
3.3	9.741	2.612	0.99	2297.528	0.991648
3.4	9.744	2.611	0.99	2296.649	0.991268
3.6	9.742	2.611	0.99	2296.649	0.991268
3.8	9.737	2.609	0.99	2294.889	0.990509
3.9	9.735	2.608	0.99	2294.01	0.990129
4.1	9.73	2.608	0.99	2294.01	0.990129
4.3	9.719	2.607	0.99	2293.13	0.989749
4.4	9.718	2.607	0.99	2293.13	0.989749
4.6	9.714	2.606	0.99	2292.251	0.98937
4.8	9.706	2.605	0.99	2291.371	0.98899
4.9	9.705	2.604	0.99	2290.491	0.98861
5.1	9.704	2.603	0.99	2289.612	0.988231
5.6	9.696	2.601	0.99	2287.853	0.987472
6.1	9.69	2.598	0.99	2285.214	0.986333
6.6	9.688	2.595	0.99	2282.575	0.985194
7.1	9.685	2.592	0.98	2279.936	0.984055
7.6	9.68	2.59	0.98	2278.177	0.983295
8.1	9.674	2.587	0.98	2275.538	0.982156
8.6	9.671	2.585	0.98	2273.779	0.981397
9.1	9.669	2.582	0.98	2271.14	0.980258
9.6	9.669	2.579	0.98	2268.501	0.979119
10.1	9.669	2.577	0.98	2266.742	0.97836
10.6	9.668	2.574	0.98	2264.103	0.977221
11.1	9.667	2.572	0.98	2262.344	0.976462